

WE CLAIM:

1. A method of cutting material comprising

connecting a computer to a saw machine, the computer being programmed to
optimize cutting of stock to satisfy a cut list,

5 measuring a piece of material to be cut,

marking any defects in the piece of material,

automatically calculating a plan for optimal cutting of the piece of material to
fulfill cut list requirements,

executing the plan including automatically pushing the piece of material toward

10 the saw, and cutting the piece of material according to the plan into one or more cut list
parts, and

automatically printing labels for the cut list parts, each label indicating information
about the part.

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2. The method of claim 1, wherein the calculating and printing steps are
carried out by the computer.

20 3. The method of claim 1, wherein the executing step is controlled by the
computer.

4. The method of claim 1, wherein the measuring step is carried out automatically.

5 5. The method of claim 1, wherein the marking step is carried out by affixing actual marks on the piece of material.

6. The method of claim 1, wherein the marking step is carried out by signaling
10 a location in space near a defect, without affixing an actual mark on the piece of material.

7. The method of claim 1, further comprising
automatically printing labels for salvage pieces having a length equal to or greater
15 than a predetermined length.

8. The method of claim 1, further comprising
automatically printing labels for defect pieces having a length equal to or greater
20 than a predetermined length.

9. The method of claim 1, further comprising
automatically printing labels for adjacent salvage and defect pieces having a
combined length equal to or greater than a predetermined length.

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10. The method of claim 1, wherein the label indicates one or more of the
following items of information: (a) length, (b) date, (c) time, (d) grade, (e) assembly
destination, (f) cut list origin, (g) batch number, and (h) project name.

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11. The method of claim 1, wherein the material is wood.

12. A method of cutting material comprising
connecting a computer to a saw machine, the computer being programmed to
optimize cutting of stock to satisfy a cut list,
inputting into the computer: (a) a cut list, (b) a minimum salvage length (S_{min}),
5 (c) a minimum defect length (D_{min}), (d) a maximum drop box length (DB_{max}),
inputting the length of a piece of material to be processed,
inputting location of any defects in the piece of material,
using the computer to automatically determine a cutting plan for optimal cutting of
the piece of material to fulfill cut list requirements, and in which: (a) salvage pieces
10 having a length less than S_{min} are cut to lengths of DB_{max} or less, and (b) defect pieces
having a length less than D_{min} are cut to lengths of DB_{max} or less; except if adjacent
salvage and defect pieces have a combined length greater than D_{min} then the adjacent
pieces are not cut to DB_{max} or less regardless of their individual lengths,
executing the plan including automatically pushing the piece of material toward
15 the saw, and cutting the piece of material according to the plan into one or more cut list
parts, and
automatically printing labels for the cut list parts and for salvage and defect pieces
that are not cut to lengths of DB_{max} or less.

13. The method of claim 12, wherein the executing and printing steps are controlled by the computer.

5 14. The method of claim 12, wherein the step of inputting the length is performed automatically.

10 15. An apparatus for controlling material processing comprising
a saw machine including a saw and a pushing mechanism configured to automatically push material toward the saw,
a computer connected to the saw machine, the computer being programmed to control optimized cutting of stock to satisfy a cut list, and
a printer connected to the computer and positioned near an out-feed on the saw
15 machine, the computer being programmed to print labels automatically for pieces conforming to the cut list.

20 16. The apparatus of claim 15, wherein the computer is also programmed to print labels automatically for salvage pieces having lengths equal to or greater than a predetermined minimum.

17. The apparatus of claim 15, wherein the computer is also programmed to print labels automatically for defect pieces having lengths equal to or greater than a predetermined minimum.

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18. The apparatus of claim 15, wherein the computer is also programmed to print labels automatically for adjacent salvage and defect pieces having a combined length equal to or greater than a predetermined minimum.

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